

Fig. 1 Cleavage and Polyadenylation Process For The
SV40 early Poly(A) site

A. CTTATCGATACCGTCGAAACTGTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAGCAT
CACAAATTCACAAATAAAGCATTTCACACTGCATTCTAGTTGTGGTTGTCCAAACTCATCA
ATGTATCTTATCATGTC

B. AAUAAA
GCA

C. GCAaaaaaaaaaaaaaaaaaaaaaaa

+ Upstream and downstream
cleavage-polyadenylation elements

Fig 2 E1A transcription control region

► ITR

CATCATCAAT	AATATACCTT	ATTTGGATT	GAAGCCAATA	TGATAATGAG	GGGGTGGAGT	60
TTGTGACGTG	GCGCGGGCG	TGGGAACGGG	CGGGGTGACG	TAGTAGTGTG	GC GG AAAGTGT	120
GATGTTGCAA	GTGTGGCGGA	ACACATGTAA	CGCAGGGATG	AP3 DNA BS TGGCAAAAGT	GAC G TTTTG	180
GTGTGCGCCG	GTGTACACAG	GAAGTGACAA	TTTCGCGCG XXXXXX	GTTTTAGGCG	GATGTTGTAG	240
TAAATTGGG	CGTAACCGAG	TAAGATTGG	CCATTTTCGC XXXXXX	GGGAAAAC TG	AATAAGAGGA	300
AGTGAAATCT	GAATAATT	GTGTTACTCA	TAGCGCGTAA	TATTTGTCTA	GGGCCGCGGG	360
GACTTTGACC	GT TT TACGTGG	AGACTCGCCC	AGGTGTTTT	CTCAGGTGTT	TTC CGC GTTC	420
CGGGTCAAAG	TTGGCGTTT	ATTATTATAG	TCAGCTGACG	TGTAGTGTAT	Ela TATA Box TTA TAC CCGG	480
TGAGTTCCCTC	AAGAGGCCAC	TCTTGAGTGC	CAGCGAGTAG	AGTTTCTCC	TCC GAG CCGC	540
TCCGACACCG	GGACTGAAA A	TGAGACATAT	TATCTGCCAC	GGAGGTGTTA	TTACCGAAGA	600

- Enhancer elements
- ✗ E2F-motif
- + Packaging elements

- ▼—▼ dl 103-551 **Ar6**
- ▼—▼ dl 189-551
- ▼—▼ dl 357-551 **Ar5**

1000 900 800 700 600 500 400 300 200 100 0

Figure 3. Sequence of Ar6pAE2ff from left and right ends of viral DNA

A. Nucleotides 1-1802 containing ITR, polyA, E2F-1 promoter, E1a and a portion of the E1b gene

1 CATCATCAATAATACCTTATTTGGATTGAAAGCCAATATGATAATGAGGGGGTGGAGT
+-----ITR-----

61 TTGTGACGTGGCGCGGGCGTGGGAACGGGGCGGGTGACGTAGGGCGCGATCAAGCTTAT
+-----ITR-----+ +-----

121 CGATACCGTCGAAACTTGTATTGCAGCTTATAATGGTTACAAATAAGCAATAGCATC
-----polyA-----

181 ACAAAATTTCACAAATAAAGCATTTCAGCTTCAGCTTAGTTGTGGTTGTCCAAACTC
-----polyA-----

241 ATCAATGTATCTTATCATGTCTGGATCCGCGCCGCTAGCGATCATCCGGACAAAGCCTGC
-----+ +-----

301 GCGCGCCCCGCCCGCCATTGGCCGTACCGCCCCGCGCCGCCGCCATCTCGCCCCCTCG
-----E2F-1 promoter-----

361 CCGCCGGGTCCGGCGCGTTAAAGCCAATAGGAACCGCCGCCGTGTTCCCGTCACGGCCG
-----E2F-1 promoter-----

421 GGGCAGCCAATTGTGGCGCGCTCGCGGCTCGTGGCTTTCGCGGAAAAAGGATTG
-----E2f-1 promoter-----

481 GCGCGTAAAAGTGGCCGGACTTGCAGGCAGCGGGGGGGGGGGAGCGGGATCGAG
-----E2f-1 promoter-----

541 CCCTCGATGATATCAGATCATGGATCCGGCTCGACTGAAAATGAGACATATTATCTGCC
-----+ +-----

601 ACGGAGGTGTTATTACCGAAGAAATGGCCGCCAGTCTTTGGACCGAGCTGAGAAGAGG
-----E1a gene-----

661 TACTGGCTGATAATCTCCACCTCTAGCCATTGAAACCACCTACCCCTCACGAACGT
-----E1a gene-----

721 ATGATTAGACGTGACGGCCCCGAAGATCCAACGAGGAGGAGGCGGTTCGCAGATTTTC
-----E1a gene-----

781 CCGACTCTGTAATGTTGGCGGTGCAGGAAGGGATTGACTTACTCACCTTCCGCCGGCG
-----E1a gene-----

841 CCGGTTCTCCGGAGCCGCCTCACCTTCCGGCAGCCCGAGCAGCCGGAGCAGAGAGCCT
-----E1a gene-----

901 TGGGTCCGGTTCTATGCCAAACCTTGTACCGGAGGTGATCGATCTTACCTGCCACGAGG
-----Ela gene-----

961 CTGGCTTCACCCAGTGACGACGAGGATGAAGAGGGTGAGGAGTTGTGTTAGATTATG
-----Ela gene-----

1021 TGGAGCACCCGGGCACGGTTGCAGGTCTTGCATTATCACCGGAGGAATACGGGGACC
-----Ela gene-----

1081 CAGATATTATGTGTTCGCTTGCTATATGAGGACCTGTGGCATGTTGTCTACAGTAAGT
-----Ela gene-----

1141 GAAAATTATGGGCAGTGGGTGATAGAGTGGTGGGTTGGTGTGTAATTTTTTTAAT
-----Ela gene-----

1201 TTTTACAGTTTGTGGTTAAAGAATTGTATTGTGATTTTTAAAGGTCTGTGTC
-----Ela gene-----

1261 TGAACCTGAGCCTGAGCCCGAGCCAGAACCGGAGCCTGCAAGACCTACCCGCCGTCTAA
-----Ela gene-----

1321 AATGGCGCTGCTATCCTGAGACGCCGACATCACCTGTGTCTAGAGAATGCAATAGTAG
-----Ela gene-----

1381 TACGGATAGCTGTGACTCCGGTCCTCTAACACACCTCCTGAGATAACCCGGTGGTCCC
-----Ela gene-----

1441 GCTGTGCCCATTAACCAGTTGCCGTGAGAGTTGGTGGCGTCGCCAGGCTGTGGAATG
-----Ela gene-----

1501 TATCGAGGACTTGCTTAACGAGCCTGGCAACCTTGACTTGAGCTGTAAACGCCAG
-----Ela gene-----

1561 GCCATAAGGTGTAAACCTGTGATTGCGTGTGGTTAACGCCTTGTGCTGAATGAGT
-----Ela gene-----

1621 TGATGTAAGTTAATAAAGGGTGAGATAATGTTAACTGCATGGCGTGTAAATGGGC
-----+-----

1681 GGGGCTTAAAGGGTATATAATGCGCCGTGGGCTAATCTGGTTACATCTGACCTCATGGA
-----E1b gene-----

1741 GGCTTGGAGTGGTGGAAAGATTCTGCTGTGCGTAACCTGCTGGAACAGAGCTCTAA
-----E1b gene-----

1801 CA
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B. Nucleotides 33881-34412 containing packaging signal and ITR

33881 AACCTACGCCAGAACGAAAGCCAAAAACCCACAAC~~TT~~CCTCAAATCGTCAC~~TT~~CCGT

33941 TTTCCCACGTTACGTCACT~~CCC~~ATTTAAGAATTCTACAATTCCAACACATACA

34001 AGTTACTCCGCCCTAA~~AC~~CCCTGGCGAGTCTCCACGTAAACGGTCAAAGTCCCCGGC
+-----packaging signal-----

34061 CCTAGACAAATATTACGCGCTATGAGTAACACAAATTATT~~CAG~~AT~~TC~~ACT~~CC~~CTCTTA
-----packaging signal-----

34121 TTCAGTTTCCCGGAAATGGCAAATCTACTCGTTACGCCAAATTACTACAACA
-----packaging signal-----

34181 TCCGCC~~T~~AA~~AC~~CGCGGAAATTGTCACT~~CC~~GTGTACACGGCGCACACCAAAACG
-----+-----

34241 TCACTTTGCCACATCCGTCGCTTACATGTGTTCCGCCACACTGCAACATCACACT~~CC~~

34301 GCCACACTACTACGTACCCGCCCGTTCCCACGCCCGGCCACGTACAAACTCCACC
+-----ITR-----

34361 CCCTCATTATCATATTGGCTTCAATCCAAAATAAGGTATATTATTGATGATG
-----ITR-----+-----

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Figure 4. Sequence of Ar6F from left end of viral DNA

1 CATCATCAATAATACCTTATTTGGATTGAAGCCAATATGATAATGAGGGGGTGGAGT
+-----ITR-----

61 TTGTGACGTGGCGCGGGCGTGGGAACGGGGCGGGTGACGTAGGGCGCGCCGCTAGCGAT
-----ITR-----+---+---MCS-----

121 ATCGGATCCCGGTGACTGAAAATGAGACATATTATCTGCCACGGAGGTGTTATTACCGA
-----+-----Ela-----

181 AGAAATGGCCGCCAGTCTTGACCAGCTGATCGAAGAGGTACTGGCTGATAATCTTCC
-----Ela-----

241 ACCTCCTAGCCATTTGAACCACCTACCCCTCACGAACGTGATTAGACGTGACGGC
-----Ela-----

301 CCCCCGAAGATCCAACGAGGAGGCCGGTTCGCAGATTTTCCGACTCTGTAATGTTGGC
-----Ela-----

361 GGTGCAGGAAGGGATTGACTTACTCACTTTCCGCCGGCCGGTTCTCCGGAGCCGCC
-----Ela-----

421 TCACCTTCCGGCAGCCGAGCAGCCGGAGCAGAGAGCCTGGTCCGGTTCTATGCC
-----Ela-----

481 AACCTTGTACCGGAGGTGATCGATCTTACCTGCCACGAGGCTGGCTTCCACCCAGTGA
-----Ela-----

541 CGACGAGGATGAAGAGGGTGAGGAGTTGTGTTAGATTATGTGGAGCACCCGGCACGG
-----Ela-----

601 TTGCAGGTCTTGTCAATTACCCGGAGGAATACGGGGGACCCAGATATTATGTGTTCGCT
-----Ela-----

Figure 5. Sequence of Ar6pAF from left end of viral DNA

1 CATCATCAATAATACCTTATTTGGATTGAAGCCAATATGATAATGAGGGGGTGGAGT
+-----ITR-----

61 TTGTGACGTGGCGCGGGCGTGGAACGGGGCGGGTGACGTAGGGCGCGATCAAGCTTAT
-----ITR-----+-----

121 CGATACCGTCGAAACTGTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAGCATC
-----polyA-----

181 ACAAAATTTCACAAATAAAGCATTTCACACTGCATTCTAGTTGTGGTTGTCCAAACTC
-----polyA-----

241 ATCAATGTATCTTATCATGTCTGGATCCCGCCGCTAGCGATATCGGATCCCGGTCGACT
-----+-----+-----

301 GAAAATGAGACATATTATCTGCCACGGAGGTGTTATTACCGAAGAAATGGCCGCCAGTCT
-----E1a-----

361 TTTGGACCAGCTGATCGAAGAGGTACTGGCTGATAATCTTCCACCTCCTAGCCATTTGA
-----E1a-----

421 ACCACCTACCCTCACGAACGTATGATTAGACGTGACGGCCCCCGAAGATCCAACGA
-----E1a-----

481 GGAGGCAGGTTTCGCAGATTTCCGACTCTGTAATGTTGGCGGTGCAGGAAGGGATTGA
-----E1a-----

541 CTTACTCACTTTCCGCCGGCGCCGGTTCTCCGGAGCCGCCTCACCTTCCGGCAGCC
-----E1a-----

601 CGAGCAGCCGGAGCAGAGAGCCTGGTCCGGTTCTATGCCAACCTTGTACCGGAGGT
-----E1a-----

Figure 6. Schematic diagram of Ar6pAF and Ar6pAE2fF vectors

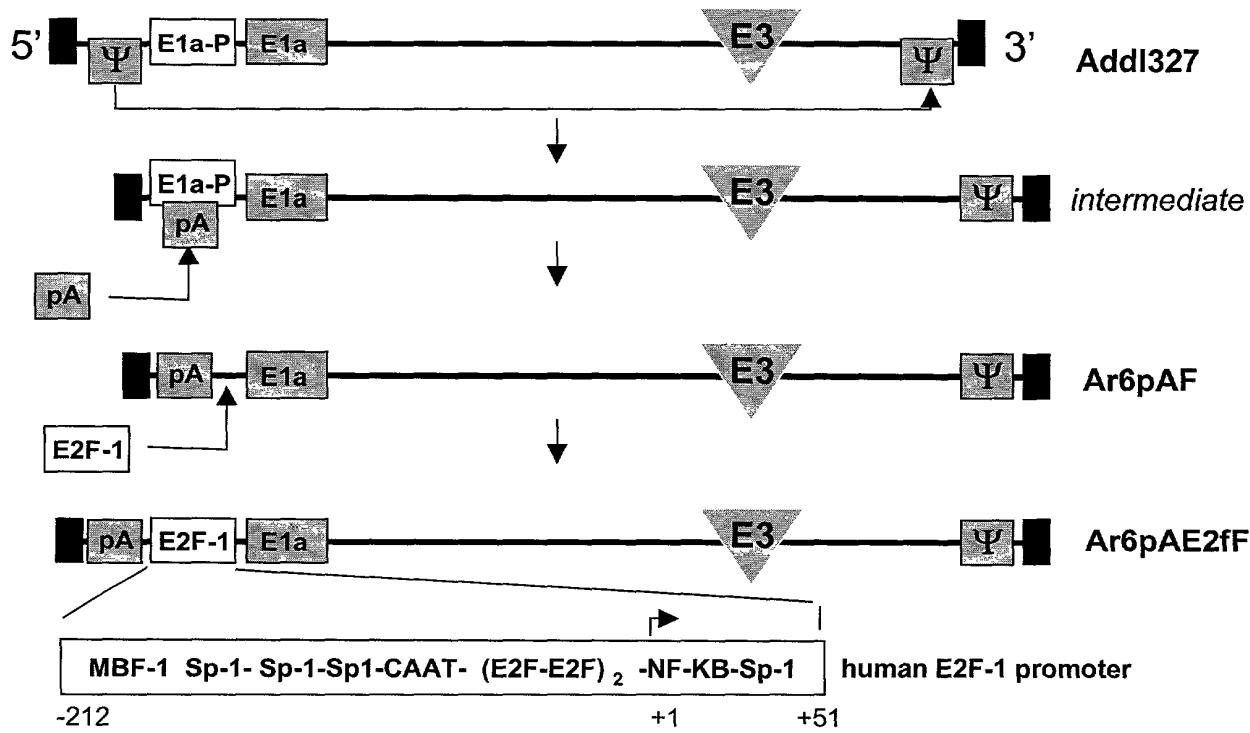


Fig. 7 Body weight change

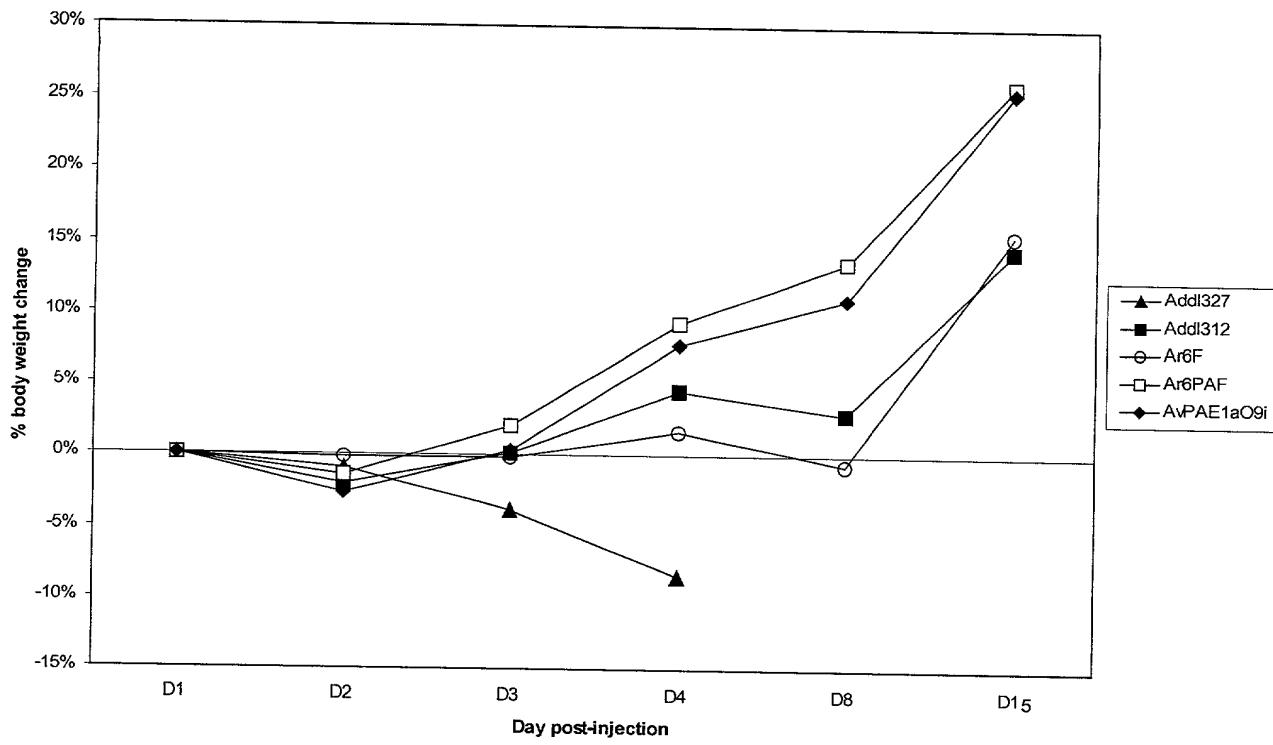


Fig. 8 Minimizing nonspecific transactivation of E1a gene

Backbones generated:

